Application Serial No. 10/553,372 Docket No. 1093-139 PCT/US Response to August 20, 2008 Non-Final Office Action

LISTING OF CLAIMS:

What is claimed is:

- 1. (Currently amended) A film in particular an embossing film, a laminating film or a sticker film, comprising a carrier layer and a replication layer and a release layer which is arranged between the carrier layer and the replication layer, wherein the film further comprises a layer of a liquid crystal material, which is applied to the replication layer and wherein a diffractive structure is embossed into the surface of the replication layer which is towards the layer of a liquid crystal material, for orientation of the liquid crystal material, said diffractive structure having at least two partial regions with different directions of orientation of the embossed structure and liquid crystal molecules of the layer of a liquid crystal material are oriented in accordance with the diffractive structure.
- 2. (Previously Presented) A film as set forth in claim 1, wherein the diffractive structure comprises a region in which the orientation direction of the structure continually changes and which is coated with the layer of a liquid crystal material.
- 3. (Previously Presented) A film as set forth in claim 1, wherein the diffractive structure comprises mutually adjoining regions involving differing orientation directions, which are coated with the layer of a liquid crystal material.
- 4. (Currently amended) A film as set forth in claim 1, wherein the diffractive structure comprises a first region for the orientation of liquid crystal material, which is covered by the layer of a liquid crystal material, and wherein the diffractive structure has a second region for producing an optical diffraction effect, in particular for producing a hologram.

Application Serial No. 10/553,372 Docket No. 1093-139 PCT/US Response to August 20, 2008

Non-Final Office Action

5. (Previously Presented) A film as set forth in claim 4, wherein a polarization representation

produced in the first region and a holographic representation produced in the second region form

a mutually supplementing representation.

6. (Previously Presented) A film as set forth in claim 1, wherein the diffractive structure

comprises a region in which the diffractive structure is formed from a superimposition of a coarse structure for producing an optical effect with a fine structure of a higher spatial frequency

for orientation of the liquid crystal material.

7. (Previously Presented) A film as set forth in claim 6, wherein the fine structure comprises

a period of less than 400 nm.

8. (Previously Presented) A film as set forth in claim 6, wherein the spatial frequency of the

fine structure is at least ten times higher than the spatial frequency of the coarse structure.

9. (Previously Presented) A film as set forth in claim 6, wherein the coarse structure is a

light-scattering structure, in particular an isotropic matt structure with a period of between 500

nm and 1 pm.

10. (Previously Presented) A film as set forth in claim 6, wherein the coarse structure is a

macrostructure with a spatial frequency of less than 300 lines per mm.

11. (Previously Presented) A film as set forth in claim 1, wherein the diffractive structure has

a region in which the diffractive structure is formed from a superimposition of a first structure for producing an optical effect with a second structure of greater profile depth for the orientation

of the liquid crystal material.

4

Application Serial No. 10/553,372 Docket No. 1093-139 PCT/US Response to August 20, 2008

Non-Final Office Action

12. (Previously Presented) A film as set forth in claim 11, wherein the profile depth of the

second structure is at least 100 nm greater than that of the first structure, wherein the profile

depth of the first structure is in particular of a value from the range of between 250 nm and 400

nm.

13. (Previously Presented) A film as set forth in claim 1, wherein the layer of a liquid crystal

material covers the diffractive structure in region-wise manner in a pattern configuration.

14. (Currently amended) A film as set forth in claim 1, wherein one of the layers and in

particular the liquid crystal layer is of region-wise differing thickness.

15. (Currently amended) A film as set forth in claim 1, wherein color interplays are

produced by targeted orientation variations in the diffractive structure structure layer.

16. (Previously Presented) A film as set forth in claim 1, wherein the film comprises a

protective lacquer layer which covers the layer of a liquid crystal material.

17. (Previously Presented) A film as set forth in claim 1, wherein the film has a further layer

with a further optically effective diffractive structure.

18. (Previously Presented) A film as set forth in claim 1, wherein a further optically effective

diffractive structure is embossed on the surface of the replication layer, which is remote from the

layer of a liquid crystal material.

19. (Previously Presented) A film as set forth in claim 17 wherein the further optically

effective diffractive structure overlies the diffractive structure at least in region-wise manner.

5

Application Serial No. 10/553,372 Docket No. 1093-139 PCT/US Response to August 20, 2008 Non-Final Office Action

- 20. (Previously Presented) A film as set forth in claim 8, wherein the further optically effective structure only partially covers the further layer or the replication layer.
- 21. (Previously Presented) A film as set forth in claim 1, wherein the film has a thin film system for producing color shifts by means of interference.
- 22. (Previously Presented) A film as set forth in claim 21, wherein the thin film layer system overlies the diffractive structure at least in region-wise manner.
- 23. (Currently amended) A film as set forth in claim 1, wherein the transfer thin film has a reflecting layer, in particular a metallic layer or an HRI layer.
- 24. (Previously Presented) A film as set forth in claim 23, wherein the reflecting layer is a partial layer.
- 25. (Currently amended) An optical security element for safeguarding banknotes, credit cards and the like, wherein the optical security element comprises a replication layer and a release layer, wherein the optical security element further comprises a layer of a liquid crystal material, which is applied to the replication layer, and wherein a diffractive structure is embossed into the surface of the replication layer, which is towards the layer of a liquid crystal material, for orientation of the liquid crystal material, said diffractive structure having at least two partial regions with different directions of orientation of the embossed structure and liquid crystal molecules of the layer of the liquid crystal material are oriented in accordance with the diffractive structure.
- 26. (Previously Presented) An optical security element as set forth in claim 25, wherein the

Application Serial No. 10/553,372 Docket No. 1093-139 PCT/US Response to August 20, 2008 Non-Final Office Action

optical security element is a two-part security element, wherein a first partial element has the replication layer and the layer of a liquid crystal material and the second partial element has a polarizer for checking the security feature produced by the layer of a liquid crystal material.

27. (Currently amended) An optical security element as set forth in claim 25, wherein the optical security element is a two-part or multi-part security element comprising two or more partial elements, wherein both a first partial element and also a second partial element has a layer of a liquid crystal material which is applied to a replication layer into which a diffractive structure for orientation of the LCP liquid crystal material is embossed and which has at least two partial regions with different orientation directions in respect of the embossed structure, and wherein the second partial element serves for checking of the security feature produced by the first partial element.